

ABSTRACT OF THE DISCLOSURE

A composition and an associated method for chemical mechanical planarization
5 (or other polishing) are described. The composition includes a surface-modified abrasive
modified with at least one stabilizer and at least one catalyst differing from the at least
one stabilizer. The composition can further include a medium containing the abrasive
and an oxidizing agent (e.g., hydrogen peroxide), wherein the at least one catalyst is
adapted to catalyze oxidation of a substrate by the oxidizing agent. Preferably, the
10 abrasive is alumina, titania, zirconia, germania, silica, ceria and/or mixtures thereof, the
stabilizer is B, W and/or Al, and the catalyst is Cu, Fe, Mn, Ti, W and/or V. Both the
stabilizer and the catalyst are immobilized on the abrasive surface. The method includes
applying the composition to a substrate to be polished, such as substrates containing W,
Cu and/or dielectrics.

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